

# *Home Energy Saver Incentive*

## *Program Description*

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PacifiCorp (Company) is proposing to offer their Idaho residential customers on Schedule 1 a comprehensive residential energy efficiency program. The program name is Home Energy Saver Incentive Program (Program). The program will provide a broad framework to deliver incentives for more efficient products and services to be installed or received by Idaho customers with a new or existing home, multi-family unit or manufactured home.

Broad categories of equipment include: appliances; washing machines, refrigerators, dishwashers; lighting, both compact florescent lamps (CFL)s and fixtures; cooling equipment including mechanical cooling and evaporative coolers; insulation for floors, ceiling and walls; windows; services such as duct sealing, air conditioning equipment tune-ups and clothes washer recycling; and miscellaneous equipment such as ceiling fans and pool pumps.

The Program is designed to leverage marketing and delivery through local business and service providers to minimize cost and increase the amount of the Program budget allocated to incentives. Two program delivery options will be employed: (1) manufacturer buy-down for CFLs resulting in the retailer offering a lower price to the customer and (2) a post-purchase delivery for all other types of equipment and services. Incentives for some measures (CFLs) may be offered seasonally to complement other regional offerings, while others will be offered year-round.

Incentives for most measures will be available regardless of who installs the product. In some cases, principally cooling equipment installations and services (duct sealing and cooling equipment tune-ups) incentive payments will require a licensed and pre-qualified contractor perform the work to ensure savings are delivered.

The comprehensive nature of the Program and changing equipment standards indicate a flexible and market-driven program delivery is required. The Company is proposing that Schedule 118 outline the basic program elements, including: customer eligibility, use of a program administrator for delivery, the seasonal nature of selected incentive offers, and that current incentive levels may change. Specific details on all aspects of the program including incentive levels, eligible equipment specifications and dates for incentive availability would be managed by the program administrator using a dedicated program web site with easy links from the Company web site. Changes in equipment specifications or incentive levels would be clearly posted on the Web site with at least 45 days advance notice.

The Company plans to deliver these Program services through a third party program administrator and received responses for this type of program as part of their demand side management request for proposals released in September 2005. The program administrator for this program was the successful respondent among several firms proposing to offer these services.

## **Initial Program Design**

### ***Appliances***

The appliance portion of the program will provide incentives to customers who purchase more efficient appliances that meet or exceed Energy Star standards. Water heating fuel source will not restrict eligibility but will be tracked on incentive applications to verify planning assumptions (and savings discounts). Appliances included in the initial program design:

- Clothes washers – Energy Star qualified. Modified Energy Factor (MEF) of 1.42 for balance of 2006. MEF of 1.72 for 2007 and beyond (until further Energy Star specification changes).
- Dishwashers – available after January 2007 when revised Energy Star standards are in effect
- Refrigerators - Energy Star rated

Initially incentives for efficient appliances will be available year-round, though standards changes may create gaps in incentive availability (changing standards for Energy Star dishwasher for example). To receive an incentive, customers will complete and submit an application for an incentive payment after they purchase an efficient appliance.

### ***Lighting***

Lighting measures are an important program component and are expected to deliver the majority of the savings. This Program element is designed to build upon current regional efforts as well as prior program offerings focusing on CFLs and be expanded. Initial lighting components include:

- CFLs – screw-in, select common wattages, Energy Star qualified

- Fixtures – Energy Star qualified

Incentives for qualified lighting fixtures will follow the same post-purchase incentive delivery path as that described for appliances. Program incentives for CFLs will be paid to manufacturers so that retailers who sell CFLs for \$1.50 or less during certain times of the year. The purpose of this incentive delivery mechanism is two-fold; to focus consumers on locating and purchasing CFLs at local retailers instead of through a “utility” program and to increase the impact of the available CFL incentive funds. Impacts from manufacturer buy-downs are greater because product mark-ups are reduced or eliminated at certain points in the delivery channel in return for a fixed unit payment from the Program. The customer experiences a lower final price point for the product than if they paid retail for the product and the Program paid part of the final purchase price as an incentive. In addition, program administration is reduced since incentives are paid to fewer participants for higher volumes of equipment.

Both CFLs and fixtures will be offered for approximately six months every year – October through March to coincide with and support regional initiatives such as Savings With A Twist operated by the Northwest Energy Efficiency Alliance and the national Change A Light Campaign.

### ***Electric water heaters***

Water heaters are included in the Program to help ensure water heaters needing replacement (operable water heaters are rarely replaced) are replaced with high efficiency equipment. The proposed incentive level of \$50 is unlikely to significantly affect water heating fuel choice. Initial water heating equipment includes:

- 50-75 gallon tanks -  $\geq 0.91$  Energy Factor (EF)
- 80-119 gallon tanks -  $\geq 0.85$  EF

Incentives for water heaters will be available year-round and will be paid via the post-purchase application process used for appliances and light fixtures.

### ***Cooling equipment***

Cooling equipment replacements decisions are important to influence when the equipment has failed since operable cooling equipment is rarely replaced. In addition cooling equipment efficiencies are subject to federal standards and these standards changed in January 2006. These new standards effectively reduce the amount of equipment efficiency only energy savings available for this Program. As a result, several equipment and installation combinations are being proposed to deliver savings

beyond the federal standards. The following cooling equipment and installation measures are initially included:

- Central air conditioning (CAC) equipment – 15 Seasonal Energy Efficiency Ratio (SEER)/12.5 Energy Efficiency Rating (EER) + Thermal Expansion Valve (TXV)
- Central air conditioning equipment – 13 SEER (code minimum) + TXV and correct sizing.
- Central air conditioning equipment – 13 SEER + TXV + best practices installation (charge and airflow).
- Evaporative cooling equipment – permanently installed.

Incentives for mechanical cooling equipment will be provided to the customer if the equipment is installed by a state licensed and program qualified contractor. This requirement is in recognition of the specialized nature of equipment installations (refrigerant management) and to ensure available energy savings are delivered. Incentives will be available to the customer via the post purchase process used for appliances. The customer may elect to assign the customer incentive to the contractor, but the contractor may not initiate such an assignment. In addition to the customer incentive, a modest (\$25 to \$75) contractor incentive will be paid in recognition of program requirements, sizing and/or best practices installation, both of which require additional effort and documentation from the contractor. Contractor incentive payments will be made directly to the contractor.

Evaporative cooling equipment does not require sizing, additional equipment or installation by a licensed or program qualified contractor because the equipment is not as complex and does not contain refrigerant. The customer incentive will be paid post-purchase. The Program will provide a modest dealer incentive (\$25) per piece of qualifying equipment to encourage dealers to stock evaporative equipment.

Incentives will be offered year-round for all types of cooling equipment.

### ***Windows and Insulation***

Incentives on a per square foot basis will be offered for upgrading insulation in walls, floors or ceilings, and for purchasing and installing more efficient windows. Heating fuel source will not restrict eligibility but will be tracked to verify planning assumptions. Additionally, customers will be asked to confirm that installed measures are not required by a current building permit.

- Insulation – per square foot, R-11 in the wall and R-19 increments based on purchased material rating, not rating of overall installed levels.
- Windows – per square foot, U – 0.32 or better

Incentive for insulation and windows will be offered year-round and will not initially require installation by a contractor, though the program will be marketed to insulation and weatherization contractors. Initial participation results may drive changes or additional requirements. Incentives will be offered via the post-purchase process outlined below.

### ***Services***

Services under this Program will initially be focused on two primary areas: cooling equipment improvements and clothes washer recycling.

Cooling equipment services will include duct sealing and cooling system tune –ups, both incorporating the Performance Tested Comfort System (PTCS) already developed for use in the Alliance service territory. Heating system fuel; dwelling type or duct location will not be used to initially restrict eligibility, but will be tracked to verify planning assumptions. Cooling equipment services will require use of a program qualified contractor with incentives available to both the customer and the contractor.

Clothes washer recycling will only be offered to customers who have an operable washing machine and who have purchased a replacement Energy Star qualified replacement unit through the Program.

- Duct sealing – PTCS requirements performed by program qualified contractor.
- Air conditioning or heat pump tune-up - PTCS requirements performed by program qualified contractor.
- Clothes washer recycling – only available to purchasers of new Energy Star washing machine who participated in the program. Old unit must be operable to qualify.

Incentives for these services would be offered year-round and would be offered via the post- purchase process (with contractor outlined below).

### ***Miscellaneous equipment***

Miscellaneous equipment includes Energy Star-rated ceiling fans and high efficiency pool pump motors. While neither measure offers high overall savings, the addition of

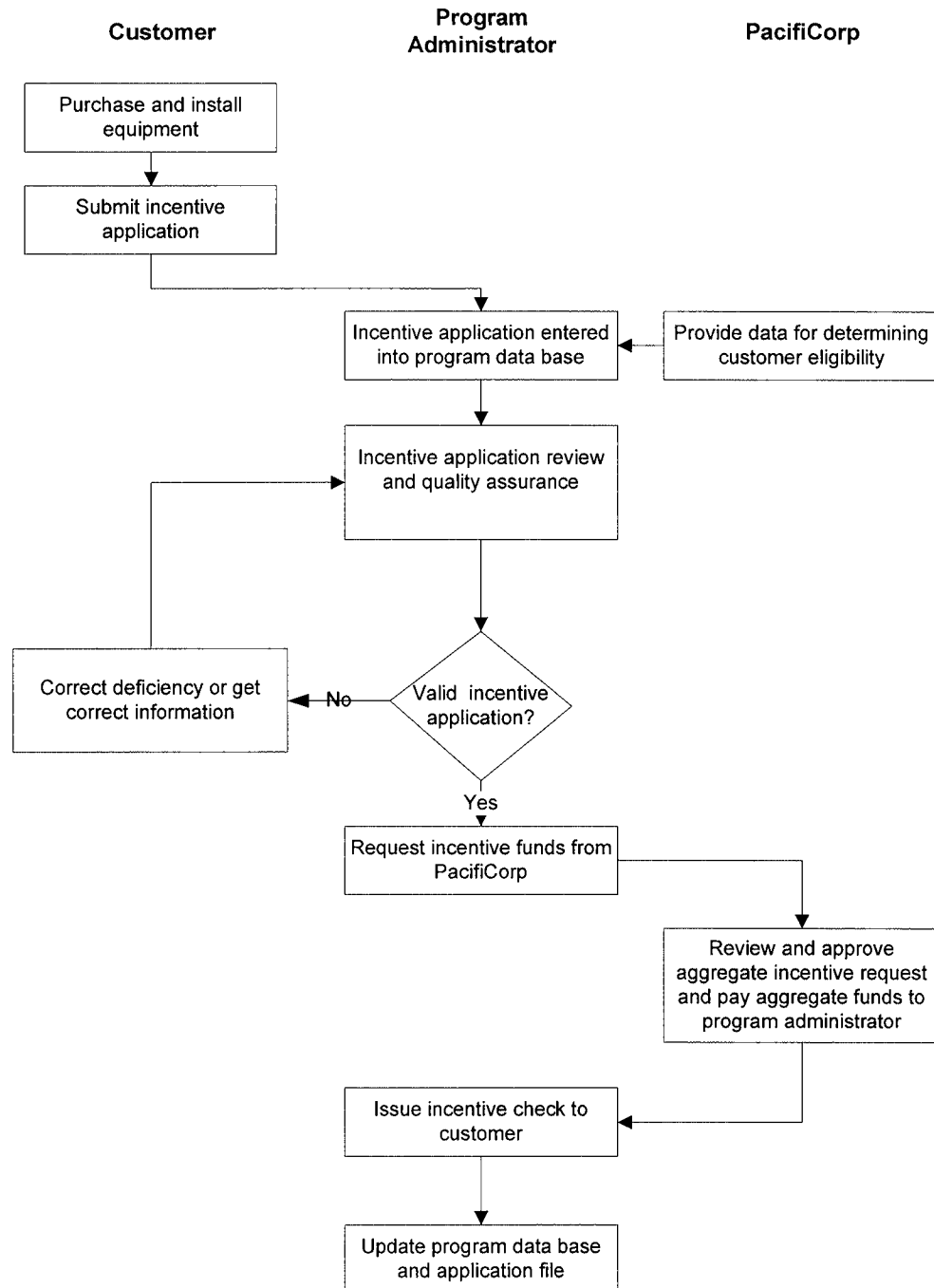
these measures provides a more complete offering and aligns with other program offerings. Both types of equipment would be offered via the post-purchase process outlined below, be offered year round and would not require installation by a program qualified contractor.

### Incentive levels

Initial incentive levels are outlined below. These levels were set by examining best available information on incremental costs of the equipment or services proposed, recognition of minimum incentive levels necessary to constitute a viable marketing message and overall program cost effectiveness. It is likely these levels would be adjusted based on program performance after the program has operated in the Idaho market.

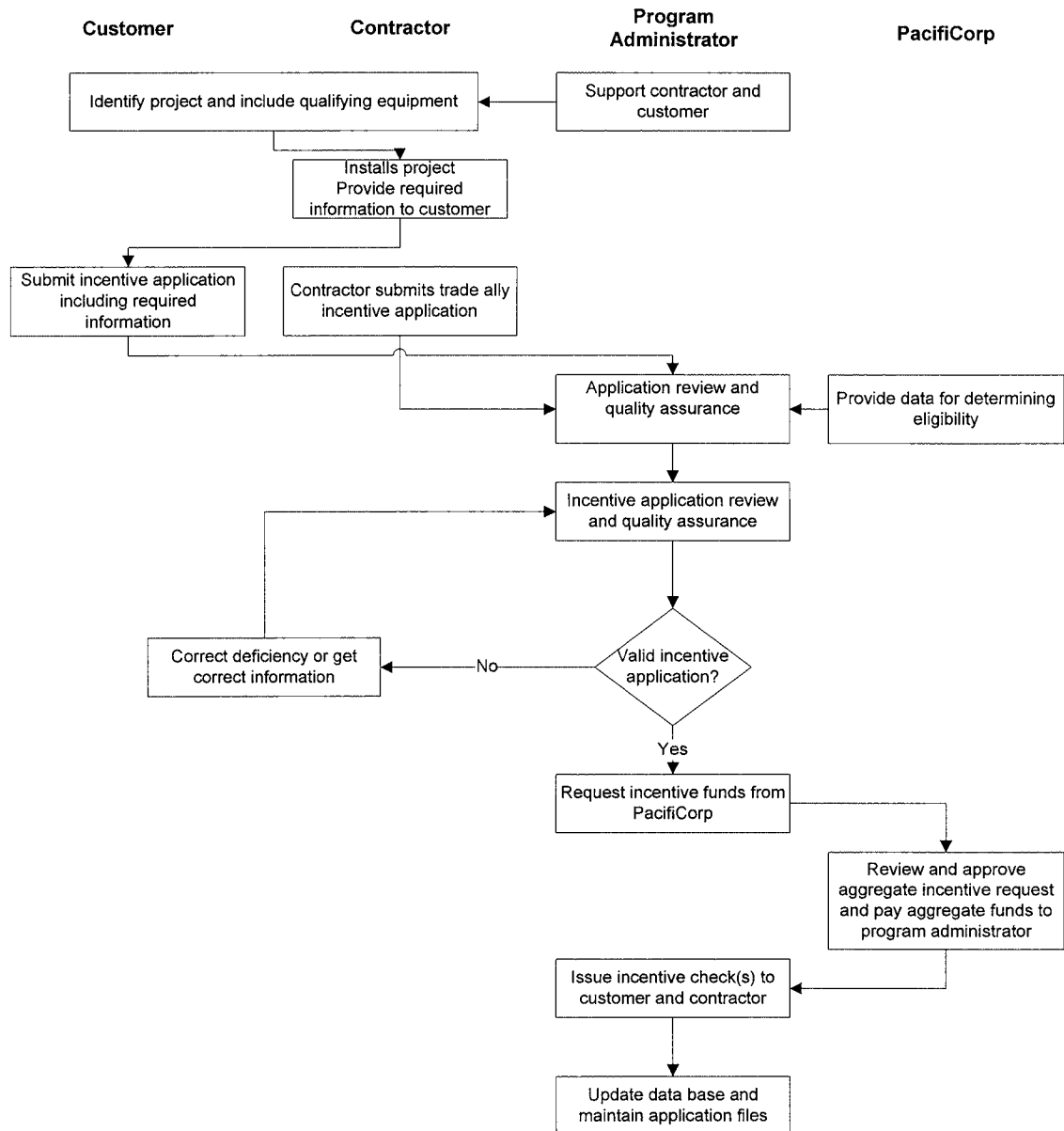
Initial incentive levels		
Appliances	Customer Incentive	Contractor or manufacturer
Clothes Washers	\$75	\$0
Dishwashers	\$20	\$0
Refrigerators	\$20	\$0
<b>Lighting</b>		
CFLs	\$0	\$1.35
Fixtures	\$20	\$0
<b>Electric water heaters</b>		
Electric Water Heaters	\$50	\$0
<b>Cooling Equipment</b>		
CAC - 15+SEER/12.5+EER and TXV + sizing	\$250	\$25
CAC - TXV & size	\$50	\$25
CAC - TXV & Proper install	\$50	\$75
Evaporative coolers	\$250	\$25
<b>Insulation &amp; windows</b>		
Insulation – Walls	\$1.00	\$0
Insulation – Floor	\$1.00	\$0
Insulation – Attic	\$1.00	\$0
Windows	\$1.50	\$0
<b>Services</b>		
Duct Sealing	\$150	\$50
CAC/HP Tune up	\$100	\$25
Clothes washer recycling	\$25	\$25
<b>Miscellaneous equipment</b>		
Ceiling Fans	\$20	\$0
Pool Pumps – 1 speed	\$50	\$0
Pool Pumps – 2 speed	\$75	\$0

## Incentive Delivery Outline – Customer post-purchase

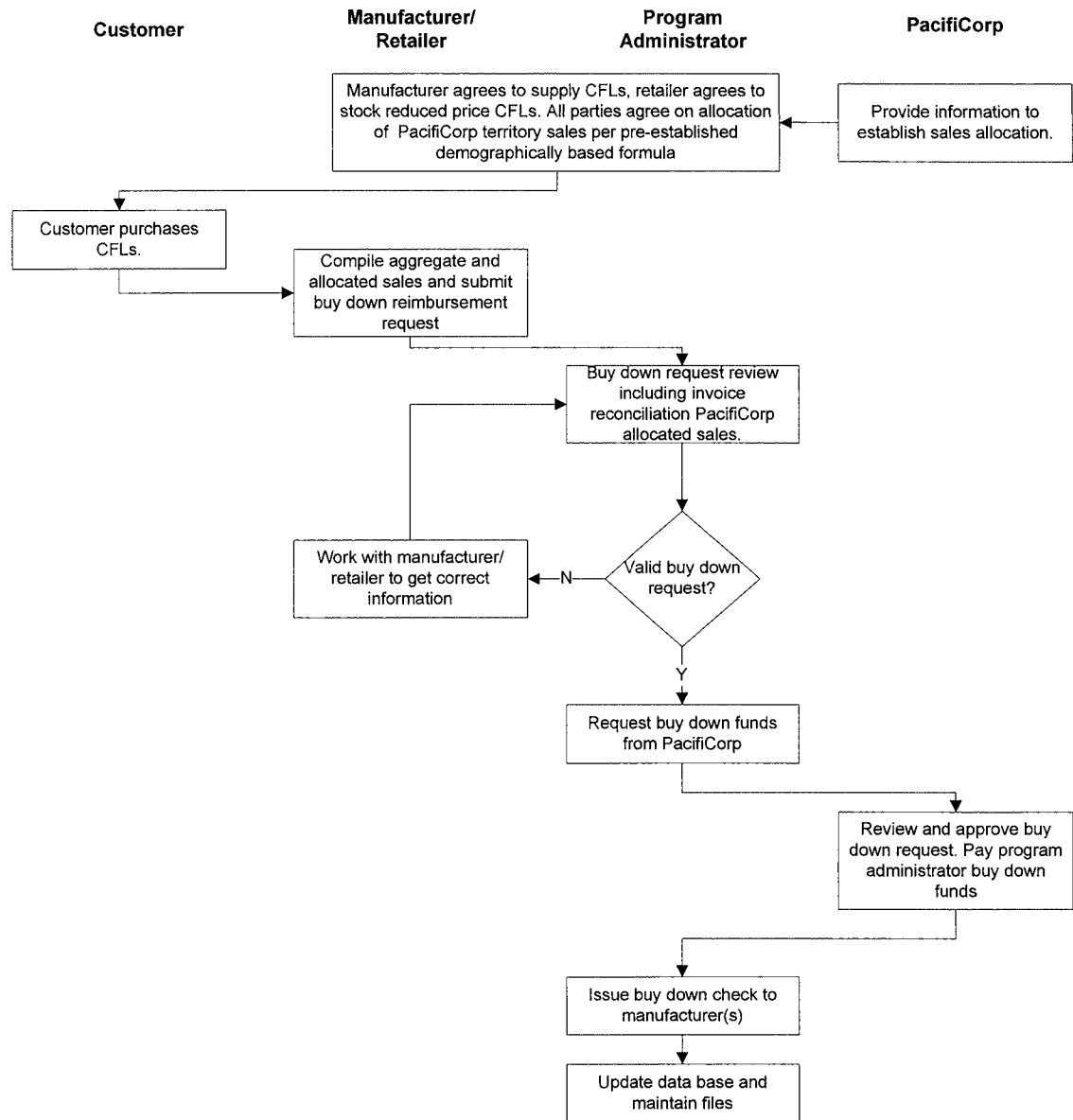




## Incentive Delivery Outline – Customer post-purchase + contractor



## Incentive Delivery outline – manufacturer buy-down



## Program Marketing

Program marketing will be done via utility channels (web site, bill messages, etc.), by the program administrator (through development and placement of program specific and cooperative advertising), contractors or trade allies and participating retailers. The program administrator will have primary responsibility for marketing to insure that participation and savings targets are achieved. The Company will review the marketing plan as well as marketing material prior to its production and use. Initial marketing tactics are listed in the table below.

Marketing tactics		
Appliances	Customer	Contractor or retailer
Clothes Washers	Point of purchase (POP) Program web site Utility channel General adv as appropriate	Field support Promotion support Coop advertising
Dishwashers	Point of purchase (POP) Program web site Utility channel General adv as appropriate	Field support Promotion support Coop advertising
Refrigerators	Point of purchase (POP) Program web site Utility channel General adv as appropriate Cross promote w See Ya Later	Field support Promotion support Coop advertising
Lighting		
CFLs	Reduced price @ retail Point of purchase (POP) Program web site Utility channel	Field support Promotion support Coop advertising
Fixtures	Point of purchase (POP) Program web site Utility channel	Field support Promotion support Coop advertising
Electric water heaters		
Electric Water Heaters	Point of purchase (POP) Program web site Utility channel	Field support Promotion support Coop advertising
Cooling Equipment		
CAC - 15+SEER/12.5+EER and TXV	Program web site Qualified contractor list Point of purchase (POP) Utility channel	Qualifying contractors Training Field Support
CAC - TXV & size	Program web site Qualified contractor list Point of purchase (POP) Utility channel	Qualifying contractors Training Field Support
CAC - TXV & Proper install	Program web site Qualified contractor list Point of purchase (POP) Utility channel	Qualifying contractors Training Field Support
Evaporative coolers	Program web site Qualified contractor list Point of purchase (POP) Utility channel	Qualifying contractors Training Field Support

<b>Insulation &amp; windows</b>		
Insulation	Point of Purchase (POP) Allow Self install Program web site Utility channel	Contractor Materials Coop Advertising
Windows	Point of Purchase (POP) Allow Self install Program web site Utility channel	Contractor Materials Coop Advertising
<b>Services</b>		
Duct Sealing	Program web site Utility channel Qualified contractor list	Qualifying contractors Training Field Support
CAC/HP Tune up	Program web site Utility channel Qualified contractor list	Qualifying contractors Training Field Support
Clothes washer recycling	POP tied to purchase of new Energy Star	
<b>Miscellaneous equipment</b>		
Ceiling Fans	same as appliances & lighting fixtures	
Pool Pumps	Point of Purchase (POP) Program web site Utility channel	

### Estimated net savings (kWh)by measure by year

Estimated net energy savings in kWh (at customer site) by equipment type projected to be delivered by the program are outlined below.

		Idaho				
#	Measures	2006	2007	2008	2009	TOTAL
1	RAC	0	0	0	0	0
2	RAC Recycle	0	0	0	0	0
3	CW	73,724	99,905	114,221	130,589	418,440
4	CW Recycle	1,371	14,399	20,578	36,075	72,423
5	DW	0	57,859	73,842	105,940	237,641
6	RF	5,896	84,211	91,942	100,382	282,431
7	WH	2,152	12,413	24,344	33,039	71,947
8	CFLs	348,517	639,134	811,444	965,821	2,764,916
9	Fixtures	1,559	8,933	12,602	13,333	36,427

10	CAC (15 SEER)	0	5,872	7,340	8,808	22,019
10	CAC Sizing	0	19,181	19,181	19,181	57,544
10	CAC Install	0	690	805	920	2,416
11	Evaporative coolers	4,116	17,805	19,256	20,825	62,001
13	Insulation	895	28,824	58,512	75,416	163,647
14	Windows	427	1,848	3,429	9,706	15,410
15	Duct Sealing	3,602	23,639	31,519	31,519	90,278
16	CAC/HP Tune up	534	2,750	4,531	4,667	12,482
17	Ceiling Fans	0	2,193	8,059	14,808	25,059
18	Pool pumps	355	2,921	3,081	3,081	9,437

443,147      1,022,577      1,304,686      1,574,109      **4,344,519**

## Cost effectiveness assumptions

Assumptions used in the cost effectiveness analysis are outlined below. These assumptions are used for initial planning and program design. The Company expects to update them through program performance tracking and the annual evaluation process.

#	Measure	State	Gross Unit Savings [kWh]	Measure Cost	Measure Life	NTG Ratio
	Clothes Washers - (2006)	ID	383	\$300	14	0.80
	Clothes Washers - (2007-2009)	ID	198	\$80	14	0.80
	CW Recycling	ID	317	\$0	6	0.60
	Dishwashers	ID	90	\$43	9	0.80
	Refrigerators	ID	86	\$99	19	0.80
	Electric Water Heaters	ID	118	\$34	10	0.80
	CFLs	ID	33	\$4.00	9	0.80
	Fixtures	ID	92	\$18	15	0.80
	CAC - 15+SEER/12.5+EER and TXV	ID	278	\$587	18	0.80
	CAC - TXV & size	ID	194	\$185	18	0.80
	CAC - TXV & Proper install	ID	65	\$185	18	0.80
	Evaporative coolers	ID	941	-\$1,000	15	0.80
	Insulation - Walls	ID	1.35	\$0.80	45	0.80
	Insulation - Floor	ID	0.85	\$0.48	45	0.80

Insulation - Attic	ID	1.31	\$0.60	45	0.80
Windows	ID	1.45	\$1.36	45	0.80
Duct Sealing	ID	1,001	\$425	20	0.80
CAC/HP Tune up	ID	110	\$225	5	0.80
Ceiling Fans	ID	105	\$25	15	0.80
Pool Pumps - 1 speed	ID	650	\$51	10	0.80
Pool Pumps - 2 speed	ID	1,400	\$182	10	0.80

### Program budget and projected results

Projected net energy savings at the customer site for each of the 4 program years along with proposed budgets are outlined below. Based on planning assumptions, the program is forecasted to be cost-effective as indicated in the cost effective analysis from Quantec dated April 27, 2006 and included as a separate document in this filing.

Administration					Total Utility Cost	Annual kWh Savings
Year	Program	Utility	Evaluation	Incentives		
1	\$131,455	\$10,000	\$0	\$31,137	\$172,592	443,147
2	\$205,708	\$10,000	\$15,000	\$187,608	\$418,316	1,022,577
3	\$222,986	\$10,000	\$15,000	\$273,770	\$521,756	1,304,686
4	\$230,623	\$10,000	\$15,000	\$331,190	\$586,813	1,574,109
Total	\$790,772	\$40,000	\$45,000	\$823,705	\$1,699,477	4,344,519

# *Home Energy Saver Incentive Program*

## *Evaluation Plan*

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This is a general evaluation plan for the Idaho Home Energy Saver Incentive Program (Program) and describes general approaches. The program will be initially be offered through 2009 and this evaluation plan describes both process and impact components. Timing and exact scope of one or both of these components will be determined based on measure mix and participation and will align evaluation investments with savings results and program expenditures.

Impact evaluations are a key component in determining cost-effectiveness and will be completed for periods in which the Program operates for a full year. For the period comprising the remainder of 2006, savings magnitude and measure mix for the balance of 2006 will be used to determine approach to the impact evaluation for this period. High percentage savings contributions from local delivery of the Alliance operated program, Savings With A Twist may indicate the Company impact evaluation focuses more on local verification of their evaluation process instead of replicating their efforts.

Process evaluations will also be undertaken in order to quickly inform the Company of any program administration issues or opportunities. It is anticipated at least one process evaluation will be undertaken during the Program duration, but the need for a process evaluation will be determined by Program results and the Company Program manager. All Program evaluations will be performed by a third party evaluator selected and retained by the company for this specific task.

### **Overview**

The goals of the evaluation are to:

1. Estimate actual energy (kWh) and demand (kW) savings
2. Analyze Program cost effectiveness
3. Assess Program delivery

### **Impact Evaluation**

The impact evaluation will include collecting key data, selecting a statistically valid sample of participants and validating the reported net unit energy savings through appropriate engineering or statistical methods. In addition, activity that would have occurred absent the presence of the program will be estimated and the planning assumptions used for net energy savings will be evaluated. Net program energy savings will be employed to assess program cost-effectiveness. The impact evaluation approach

will vary by type of measure installed and will vary for each the separate components of the Home Energy Saver Incentive Program.

### **Measure Verification**

PacifiCorp, through its Program Administrator, has a comprehensive quality assurance process in place for this Program consisting of:

Appliance (or any self-installed post purchase measure):

- Qualifying equipment specifications clearly available to customers and retailers throughout Program delivery.
- Incentive application requires address and account number. Program administrator has customer data with which to cross check the application.
- Program administrator review of appliance participant tracking information.
- Program administrator quality control processes.

Post-purchase (equipment or services) with contractor requirement:

- Provide qualifying equipment specifications clearly available to customers and retailers throughout program delivery.
- Provide Program sponsored process for contractors to become program qualified.
- Make contractor installation requirements and list of program qualified contractors clearly available to customers throughout program delivery.
- Insure training, site visits and program requirement information available and used by program qualified contractors.
- Insure incentive applications from both customers and installing contractor require address and account number (customer) or customer name and address (contractor). Insure Program Administrator has customer data available to cross check application(s).
- Program administrator review of appliance participant tracking information.
- Program administrator quality assurance process including some or any of the following: sampling, phone verification and possible on –site inspection of appliance participant projects.

Manufacturer buy -own

- Manufacturer and retailer participation guidelines are available and consistently applied.
- Program administrator and manufacturer agreement on participation percentages by location depending on territory demographics are agreed to and documented.



- Invoice reconciliation is consistent and well documented.
- Adequate data is collected at retailer level for Alliance evaluation efforts.

The evaluator will review the quality assurance process to assure that each of these steps has been fully implemented. In addition, the evaluator will independently review a sample of the quality assurance and inspection reports. Based on this review the evaluator will assess the level of additional verification (including on-site) required.

### **Establishment of Baseline Operating Practices and Efficiency Levels**

Determination of what would have happened in the absence of the effort is key in assessing the effects of an efficiency program. Through review of application data, the evaluator will characterize the baseline efficiency levels and operation.

Specifically, the evaluator will characterize:

- Estimated existing and improved equipment efficiency levels.
- Estimated equipment efficiency levels in the absence of this program.

Additional data collection (including site visits) may be conducted to determine whether:

- Original assumptions used in the reported net deemed savings calculations were reasonable
- Measures were installed as planned
- Measures operated as planned
- Quality assurance was appropriate and conducted properly.

Any fundamental differences will be identified and revised savings estimates will be provided.

### **Savings estimates**

Evaluated energy and demand savings will be estimated using one or more of the following methods:

- Unit Energy Consumption (UEC) data bases
- Simulation modeling
- Engineering calculations
- Billing analysis

### **Conduct Cost-Effectiveness Analysis**

The evaluator will conduct a cost-effectiveness analysis incorporating established cost-effectiveness tests and analysis methods employing the same methodology and analytical model employed in the planning assumptions. Results will be calculated using the values from the Company Integrated Resource Plan (IRP) and the Forward Price Curves used when the Program was initially filed as well as any updates to the values generated from these two sources.

### **Process Evaluation**

In order to inform the Company about issues or opportunities regarding the delivery and administration of the Program, a process evaluation will be conducted on a regular basis. The process evaluation will include interviews with utility staff and participants.

### **Survey Program Administration and Utility Staff**

The evaluator will interview program administration and utility staff regarding:

- Customer application process(es)
- Customer eligibility criteria and the verification process
- Marketing
- Vendor relations
- Program data collection
- Utility, implementer and other program coordination

### **Participant Survey Design and Implementation**

After reviewing applications, the evaluator will complete telephone surveys with Program participants. The aim of the survey will be to determine:

- How each participant learned about the Program
- Their assessment of the value of the Home Energy Saver Incentive Program services
- Impact of the Home Energy Saver Incentive Program services on their energy consumption.
- Satisfaction with the program administrator and incentive application processing.
- Satisfaction with their participation in the Program
- Whether they implemented any additional energy efficiency measures and whether the Program influenced them to do so.

### **Develop Findings and Recommendations**

The evaluator will analyze the collected data and opinions to assess Program strengths, weaknesses, bottlenecks, areas for improvement, and best practices.

### **Management & Reporting**

The evaluator will deliver a draft and final report of findings. The final report will reflect all the comments made by stakeholders. It will provide a complete description of the relevant evaluation objectives and how they were achieved. The final report is to contain the following elements:

- Executive Summary
- Description of the Program, its goals, and objectives
- Statement of the evaluation goals and objectives
- Discussion of methodologies
- Implementation procedures and assumptions for each method
- Data-collection procedures and methods
- Sample design and sample attrition
- Results and their interpretation (demonstrated clearly with charts and tables)



**Date:** April 27, 2006

**To:** Don Jones Jr.  
Jim Gilroy

**From:** Brian Hedman

**Re:** Idaho Home Energy Saver Incentive Program Cost Effectiveness Analysis

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The tables below present the assumptions and cost effectiveness findings of the Idaho Home Energy Saver Incentive program based on the program implementation spreadsheet dated 4/26/06. The program is a multi-measure residential energy efficiency program. This cost effectiveness analysis was conducted with the following assumptions:

- Measures were assigned individual measure lives and load shapes
- Air Conditioning measures were analyzed using the August 2006 update of the 2004 IRP Air Conditioning 12% load factor decrement, non AC measures were analyzed using the IRP system 65% load factor decrement
- The March 2006 forward price curves for Palo Verde were used

## **Cost Effectiveness Assumptions**

The discount rates in Table 1 were obtained from two sources. For the TRC, the discount rate used is the US Treasury Long Term Composite bond rate posted on April 10, 2006. The discount rate for the Utility Cost, Rate Impact and Participant Cost tests is the after-tax weighted cost of capital from PacifiCorp's 2004 Integrated Resource Plan. PacifiCorp also provided the values for line losses and the residential retail energy rate.

The program is cost effective under both the base case forward prices and the IRP decrement scenarios. The rate impact test (RIM) has a benefit cost ratio less than one, indicating some upward rate impact.

**Table 1: Inputs**

Parameter	Value
Discount Rate for TRC test	5.17%
Discount Rate for UTC, RIM, PART tests	7.18%
Line Loss	10.225%
Residential Energy Rate (\$/kWh)	\$0.0738

**Table 2: Program Costs and Savings**

Year	Administration				Total Utility Cost	Annual kWh Savings
	Program	Utility	Evaluation	Incentives		
1	\$131,455	\$10,000	\$0	\$31,137	\$172,592	443,147
2	\$205,708	\$10,000	\$15,000	\$187,608	\$418,316	1,022,577
3	\$222,986	\$10,000	\$15,000	\$273,770	\$521,756	1,304,686
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Total	\$790,772	\$40,000	\$45,000	\$823,705	\$1,699,477	4,344,519

## Results

The cost-effectiveness of the Idaho Home Energy Saver Incentive program was calculated using Quantec's Demand Impact and Cost Effectiveness model. The model distributes the assumed annual kWh savings across the year based on hourly residential air conditioning, lighting and general household load shapes for Idaho. Each of these hourly saving values is multiplied by the associated hourly avoided-costs from PacifiCorp's market price forecasts or IRP decrement values. The products are then compared on a net present value basis. This approach accurately captures the hourly differences in the value of a kWh during the year.

**Table 3: 2004 IRP Load Factor Decrement**

All Measures				AC: IRP Decrement	
	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0501	\$1,745,055	\$2,141,276	\$396,221	1.227
Total Resource Cost Test (TRC) No Adder	0.0501	\$1,745,055	\$1,946,615	\$201,560	1.116
Utility Cost Test (UCT)	0.0401	\$1,396,394	\$1,645,289	\$248,894	1.178
Rate Impact Test (RIM)		\$3,377,344	\$1,645,289	(\$1,732,055)	0.487
Participant Cost Test (PCT)		\$348,660	\$2,743,915	\$2,395,255	7.870
Lifecycle Revenue Impacts (\$/kWh)				\$0.0000327063	

**Table 4: March 2006 Forward Price Curve: Base Case**

All Measures				AC: 03/31/06 Base Case FPC	
	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0501	\$1,745,055	\$2,447,458	\$702,404	1.403
Total Resource Cost Test (TRC) No Adder	0.0501	\$1,745,055	\$2,224,962	\$479,907	1.275
Utility Cost Test (UCT)	0.0401	\$1,396,394	\$1,898,191	\$501,797	1.359
Rate Impact Test (RIM)		\$3,377,344	\$1,898,191	(\$1,479,153)	0.562
Participant Cost Test (PCT)		\$348,660	\$2,743,915	\$2,395,255	7.870
Lifecycle Revenue Impacts (\$/kWh)				\$0.0000279307	